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ABSTRACT

Miami-Dade Community College's Open College allows students to enroll in classes, purchase course materials, and proceed through coursework at their own pace without having to go to a campus except for course examinations. Three major components of the distant learning program are audio, video, and print materials which are used in conjunction with a two-way, computer-based communication system. This system permits faculty/student dialogues in a written mode. A distant learning student responds to a faculty-designed questionnaire which assesses the student's progress at strategic points along a course of study, in both the cognitive and affective domains. Based on the responses obtained, a letter is returned to the student which contains an individualized "prescription for learning". The prescription, formulated by the instructor and transmitted to the student via computer, is based on the student's unique educational strengths and needs. As a result of this process, impersonal materials are utilized to deliver personalized instruction. Additionally, the student is able to act as the principal initiator of learning. A graphic model of the distant learning program is included as is a flow chart depicting the operation of the computer-based instructional program. (JDS)

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INSTRUCTION FOR DISTANT LEARNERS THROUGH TECHNOLOGY

A Paper to be Presented

at the

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INSTRUCTION FOR DISTANT LEARNERS THROUGH TECHNOLOGY

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Miami-Dade Community College

INTRODUCTION

Our present day society is caught up in an era of phenomenal changes in technology. This truly is a world-wide revolution!

Lunar landings, heart transplants, communications satellites, and high-speed computers are expanding human interactions on this earth and beyond. Intercontinental jet travel, instant TV replays, microwave ovens, and copy machines are altering one's perception and use of time. Virtually no one person or place in our civilized global community can escape the accelerated pace of man and machine. Technological advancements surround us and perpetually outdate themselves.

The effect of the sophisticated devices of modern day on human beings takes many forms. At the extremes are good and evil with the full range of human conditions distributed between them. The long-term impact of continued alterations to current conditions on the individual is best left to the scrutiny of behavior scientists. But it is clear, even to the casual observer of contemporary society, that mechanical advancements are dramatically changing the basic life patterns of the inhabitants of this planet.

One cannot afford to be oblivious to the volume and velocity of technological change, no, not even the educators. The "ivory tower" of academia should provide no comfort and is as vulnerable to technological shock as any other segment of society. Consequently, an on-going process of evaluation at college level is essential, if not imperative.

The ultimate goal for those designing educational programs is to determine what existing forms of technology can be employed to enhance the mission of a particular educational enterprise. This question must be internalized by the constituencies of each institution in order to arrive at a satisfactory answer that is aligned to the

role and scope of a specific college or university. It is our belief that if such a practice is carried out conscientiously and systematically, there can be real promise for the improvement of college teaching. We shall proceed to explain our contention by drawing upon the experiences at Miami-Dade Community College.

MIAMI-DADE COMMUNITY COLLEGE

For the past quarter of a century, America has introduced each decade with a new theme for higher education. In the 1950's, the theme could have been "accent on selection." In the 1960's, it was "accent on access." For the 1970's, it is "accent on learning" (Cross, 1976). This implies a renewed emphasis on teaching.

This new theme, "accent on learning," penetrated many institutions of higher learning in the United States. The college we represent was very much at the forefront of this movement. Since this is an International Conference, it will be in order (we hope) to mention that Miami-Dade Community College is regarded as one of the leading community colleges in the United States. Many distinguished educators from other countries have visited Miami-Dade over the years because it serves as an excellent model for a comprehensive two-year community-based college. It offers a variety of educational programs to approximately 60,000 students enrolled in its four major campuses or at educational centers located throughout the Miami area. The President of the college, Dr. Peter Masiko, Jr., is recognized as one of the outstanding leaders of educational reform in the United States. The college's Executive Vice President, Dr. Robert H. McCabe, through his creative mind and extraordinary skills, has instituted many instructional programs that have achieved success, not only at our college but throughout the country.

In the early seventies, one of the dilemmas Miami-Dade found was how to expand its services to a population yet unreached by the college without constructing new facilities or increasing expenditures inordinately. But influenced by the British Open University and the availability of a variety of technology, a new open-learning program was formulated to serve individuals who could not attend regular on-campus

classes. Thus, these distant learners provided the impetus for new instructional designs and teaching strategies. The result was Miami-Dade's first adventure into open learning.

The authors of Diversity by Design (1973) aptly expressed the spirit of the concept of "open learning" when they described it as "a philosophy of learning, a craft of teaching, a vision of life." In presenting the instructional program for distant learners at Miami-Dade Community College, we would like to share with you our philosophy of learning and arrangement of the learning environment for the student.

UNIQUE EDUCATIONAL SETTING

Students enrolling for distant learning at Miami-Dade are assigned to the Division of Open College--a unique educational setting. This setting finds students, approximately 2,000 each term, remote from the campus, having the ability to apply, register, purchase course materials, and proceed at their own pace through carefully designed courses, without the need to come to the campus on a prescribed time schedule. Mid-term and final examinations are offered on campus unless students qualify as shut-ins, whereby special testing arrangements are made. Many of the students study in their homes, some on their job locations, some in hospitals and penal institutions, and others by coming to the campus and studying at their own convenience. Students in Open College represent a great cross section of the local population--men and women, ages ranging from 17 to 60, with the average age being 35 and comprising approximately 15 percent of minority enrollment categories.

Some 20,000 students during the last five years at Miami-Dade Community College have been exposed to an external open-learning program that has relied heavily on telephones, radios, television, and computers and a host of other electronic gadgets to facilitate an individualized approach to learning at a distance. What has been developing during this period of time is a personalized system of instruction built around impersonalized devices. Of course, it is not the machines that personalize the program, but the creative minds of the faculty who manipulate the hardware to

produce an environment conducive to learning.

Courses for college credit have been developed and delivered to coincide with national showing in the U.S. of television series produced by the BBC such as "The Ascent of Man" and "Classical Theatre." The most significant addition to the courses made available for distant learners is a history course utilizing the national telecast of Alex Haley's ROOTS series on a commercial network. This series is claimed to have attracted the largest viewing audience in the U.S. for any television broadcast by any network. Besides courses developed around national showing of television series, other courses being offered utilize local broadcasts of television and radio programs.

Considering the large number of students in combination with a small faculty, it becomes important to deal with students as unique individuals. Our goal is to determine how well students are proceeding, to discover their particular needs, and then to provide the pertinent support so that they can be successful. This is where technology can offer the greatest promise.

There are three essential components of the open-learning program: audio materials, video materials, and print materials. These three--audio, video, and print--used in conjunction with a two-way computer-based communication system known as RSVP provide individualized learning. RSVP (Response System with Variable Prescriptions) is critical to the learning process as it integrates the other components into a cohesive and meaningful learning program for the student.

COMPUTER-BASED INSTRUCTION

The individualized instruction via RSVP can be best understood if it is seen as faculty-student dialogues in the written mode. There are three stages in the dialogues, which progess in a spiral manner to the conclusion of the course.

1. The faculty develops multiple-choice items to elicit student responses relative to academic materials at strategic points of a course. These items, which attempt to assess students' progress in both cognitive and affective

domains, are grouped into unit surveys and are made available to the student at the point of entry in the program.

2. The student utilizes as many of the course components as desired and responds to the RSVP multiple-choice items on a mark-sense card and mails it to the faculty.

3. The survey is processed through the computer which results in a personal RSVP letter to the student and includes individualized variable prescriptions. The variable prescriptions may be based on student responses, as well as their characteristics (age, week of entry, past performance, etc.). In the letter, the faculty emphasizes the relevant points from the various components, thus providing a cohesive plan for distant learning.

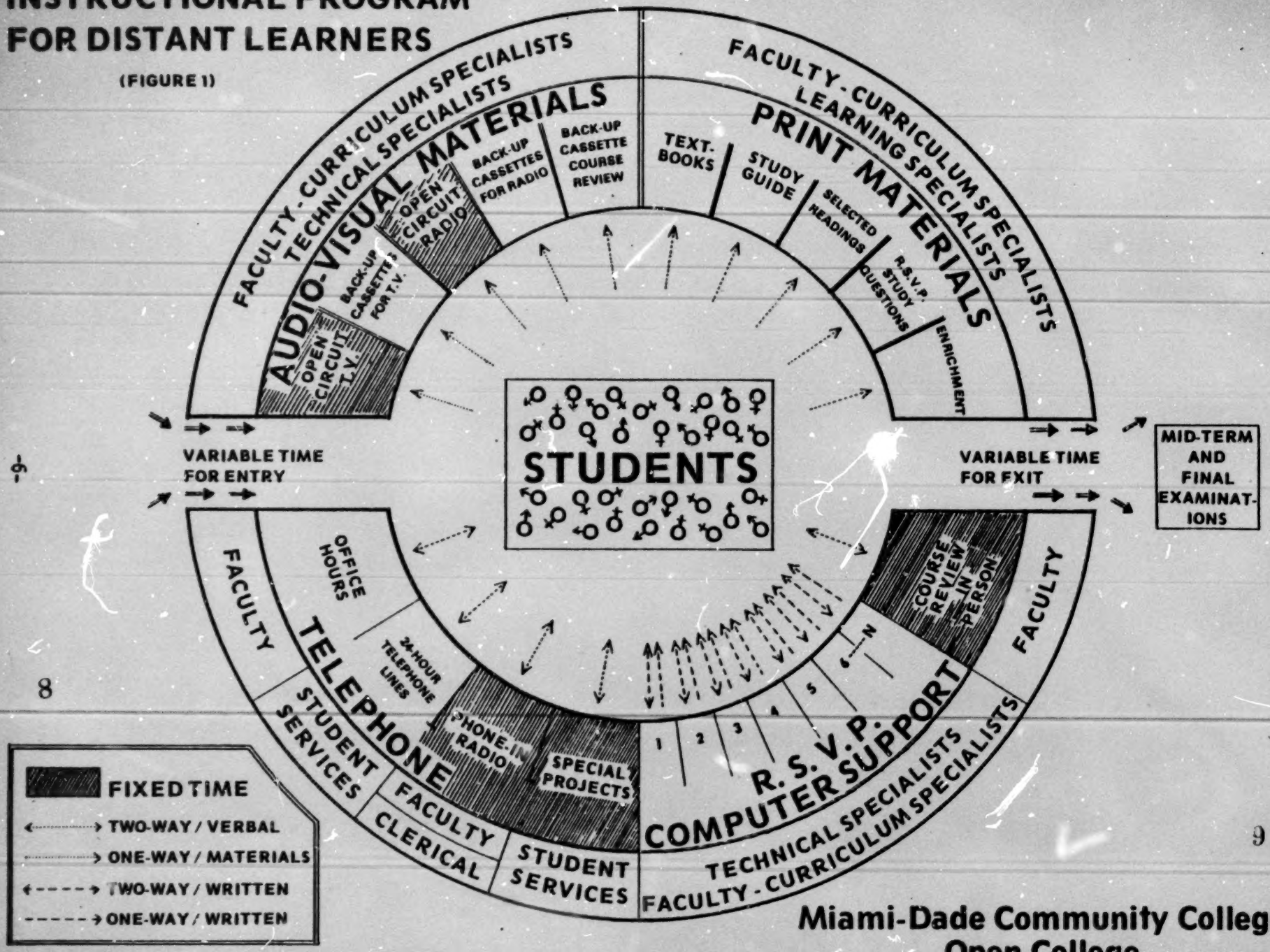
For the student learning from a distance, the video materials can take the form of either open-circuit television broadcasts delivered directly in the home, or they can be video materials that are available on closed-circuit or as video cassettes. The same is true of the audio material, which can be delivered either at the home by open-circuit broadcast or available as audio cassettes. In addition to these mediated materials there are an array of print materials which include the textbook, anthology, study guides and supplemental materials. Some, or all of these materials, can be used by students at their own pace, in their own setting. Thus, the student at a distance becomes the principal initiator for learning. The purpose of the Miami-Dade program is to present the materials in such a way that students do not perceive the distance as a deterrent or feel that they are in total isolation from the faculty who have designed the program. The psychological distance can be shortened, if not eliminated altogether, by the use of the RSVP system.

THE STUDENT AS THE INITIATOR

Figure 1 depicts a conceptual framework of how the various materials form a cohesive instructional program, catering to the needs of the individual students who are learning at a distance. This model places the student in the center of the learn-

INSTRUCTIONAL PROGRAM FOR DISTANT LEARNERS

(FIGURE 1)



ing program, and the choices available to the student become not only numerous but many are also freed of time constraints. The number of choices for instructional support, repeated use of the materials, and elimination of time constraints place the prime responsibility on the students as they work their way through the program.

The principles underlying the model are:

1. The human mind in the open learning program at Miami-Dade Community College is not a single mind. It is a collaborative mind emerging as an outcome of several minds from the administrative, instructional, research, technical, clerical and para-professional personnel. Blessing or bane? Both. As the sayings go "Two heads are better than one," and "Too many cooks spoil the broth." We have seen both at action in our setting.
2. Offering a course for distant learners dictates advanced planning which entails certain necessary evils, such as lack of flexibility to incorporate current data. Unless the organizational plan, by intention, includes some components that can accommodate flexibility, the faculty and students would become helpless victims of a rigid program. In Figure 1, the flexible components are identified by single lines and the rigid ones by double lines. The telephone-based activities and the RSVP feedback process present the greatest flexibility for the faculty to incorporate new ideas, modify earlier prescriptions, and include additional meaningful materials.
3. For a majority of students who decide to learn at a distance, the decision may not be by preference, but out of necessity of their life patterns which do not allow them to attend scheduled classes on campus. For these students, then, time constraints should be minimal. As you can see in Figure 1, students are allowed variable times for entry and exit. Also, the time-fixed components (the shaded areas) are far less in proportion to the time-free components (the unshaded areas). For example, there is no time constraint for the student (staying at his own location) to use the RSVP system or the

twenty-four message recording system. Additionally, since our model permits variable times for entry and exit, back-up cassettes for three of the five time-fixed components--TV and radio broadcasts and review sessions are provided, which, then, become time-free components. This option is available if students are willing to travel to a campus or a local library.

4. One of the hardships of learning at a distance is learning through self-initiated efforts and in the absence of two-way interaction. By design, the model in Figure 1 incorporates provisions for two-way communication (two-headed arrows, dotted or broken), and opportunities for the faculty to initiate the interaction with the students. The telephone, for example, has been used in a variety of ways to reach the students. Students, who are detected in the RSVP system to have difficulty or to be high-risk possibilities, are contacted over the telephone by faculty. Through this process the students and the faculty members can interact over the telephone. The two explore the circumstances leading to unsatisfactory performance, and ways to resolve the difficulties. Additionally, the telephone has been used from time through phone-in open radio broadcasts where faculty can discuss questions called in by students. This allows not only the individual student to have questions answered, but provides the answers to other students who are listening as well.

5. Last, and by far the <u>most</u> significant aspect of learning at a distance (for that matter in any mode) is the desirability of individualizing instruction in accordance with learner needs. While the projects with high-risk students (Anandam and Fleckman, 1977) accomplish this on a modest scale, a high degree of individualization of instruction is achieved through RSVP.

Those of you who followed closely the explanation of the model in Figure 1 would have recognized that RSVP qualifies for all the five principles emphasized in this model - collaborative effort, flexible and time-free components, two-way communication

and individualization of instruction. As mentioned earlier, RSVP is seen as a significant, integral and dynamic component of the academic program for distant learners at Miami-Dade Community College.

COMPUTERIZED COMMUNICATION

Why is it that a computer system is considered as a significant, integral and dynamic component of the instructional program for distant learners? Figure 2 illustrates the interactive process between student and faculty on a one-to-one basis with the aid of the RSVP computer system. It presents the possibilities that exist with the RSVP system. If students are making satisfactory progress in a unit, there is no need for them to complete an alternate survey. They are given variable prescriptions, if found necessary, and prompted to proceed with the next unit. On the other hand, students exhibiting lack of understanding are encouraged to complete an alternate survey after reading the specialized materials being sent to them.

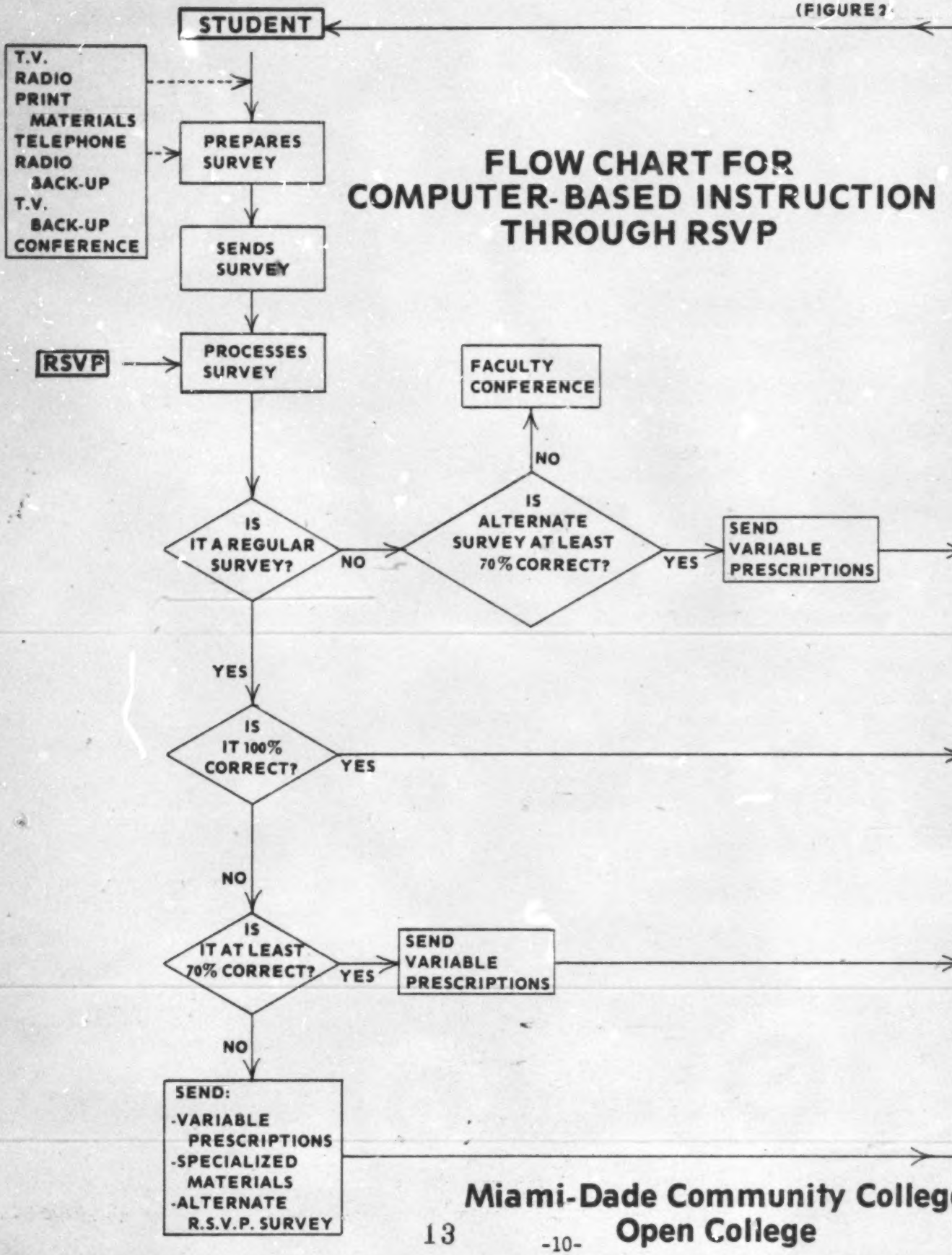
There are several concomitant benefits which accrue to students and faculty in this type of computerized communication. These are:

1. provide individualized instruction as and when students are ready;
2. maintain meticulous record keeping;
3. free faculty time from management chores to interact with students at a distance;
4. provide invaluable data for evaluating the effectiveness of the instructional program for distant learners.

The student is not penalized for the errors in answering the RSVP surveys. Rather, the errors provide a unique opportunity to diagnose student difficulties which form the basis for variable prescriptions. Each faculty determines how to diagnose student difficulties and develops appropriate prescriptions. RSVP carries out the faculty's plan to the letter, whether there be 50, 500 or 5000 students in the course. The personal, human touch of the faculty is reflected in their style of writing the variable prescriptions. (Examples will be distributed.)

(FIGURE 2

FLOW CHART FOR COMPUTER-BASED INSTRUCTION THROUGH RSVP



The immediacy of feedback and the personal, individual attention given to the students are repeatedly claimed by them as the most rewarding and satisfying experience in college level courses. Term after term, statistical analysis yielded a significant positive correlation between level of participation in RSVP Surveys and level of performance in the course examinations (Anandam, 1976; Anandam, 1975). Figure 3 portrays this relationship for one term.

CONCLUSION

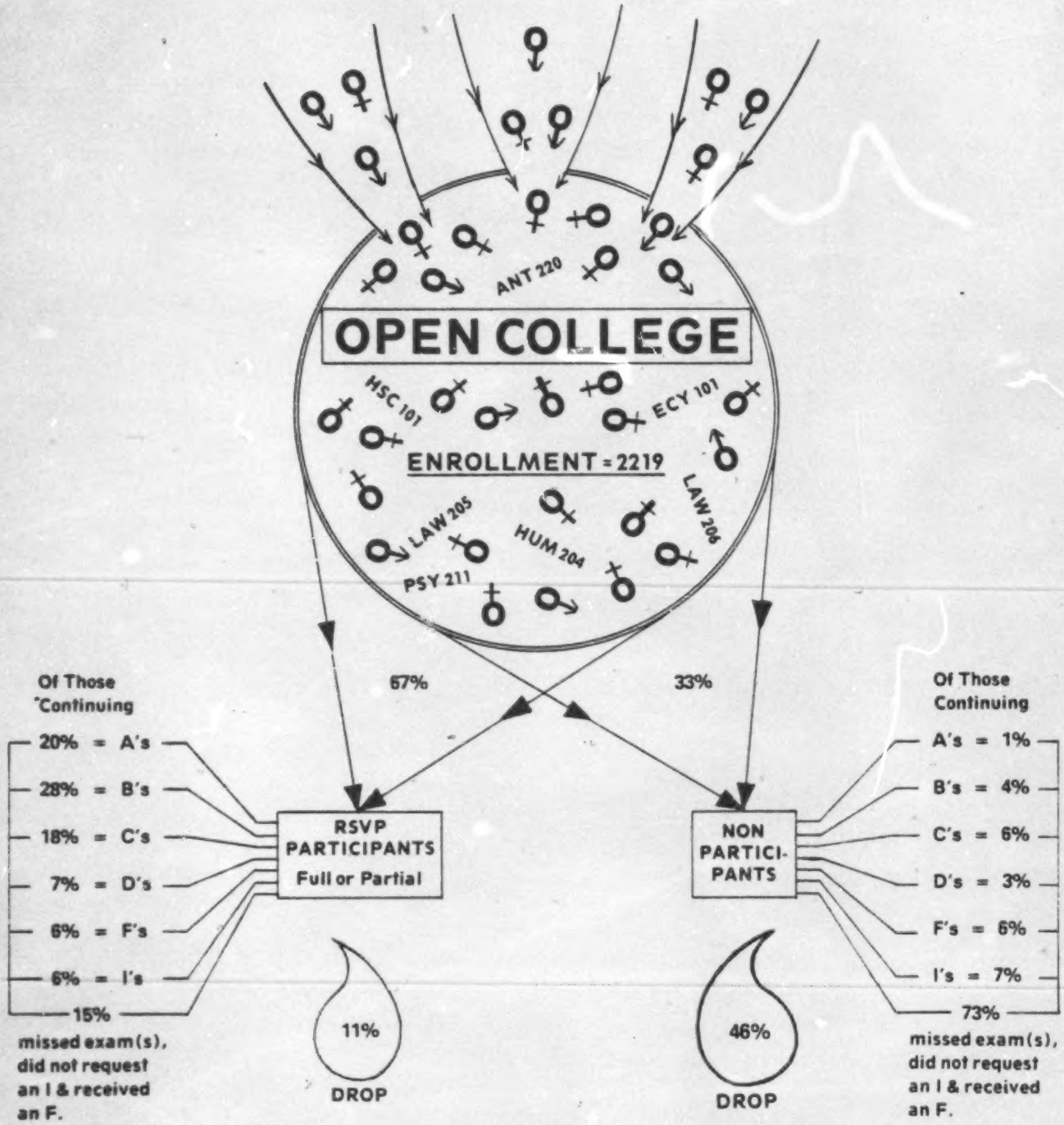
Any program of learning utilizing modern technology is as sound as the human mind which conceives a plan, develops the instructional components and offers them in a manner so as to maximally exploit the inherent strengths of the various technological innovations in order to optimally meet the needs of individual students. Easier said than done. Are we there already? The answer is "No." While the potentials of modern technology are revolutionary in the teaching-learning process, the utilization of the same technology is an evolutionary progression. There have been professional enhancement and personal gratification on a collaborative basis through the program offered by Miami-Dade Community College for distant learning. We have not made earth-shaking changes overnight nor have we stood still from day-to-day.

What does the future hold for open-learning programs? However difficult it may be to predict, one thing is certain. With the explosion of technological changes, the future will not resemble the present. On the immediate horizon, for example, we find tremendous progress in computer processing. Remote terminals, expanded storage and faster turn-around time all suggests that our Open College students may again benefit from these new computer applications. Also, the emergence of video disk and satellite distribution systems has potential for completely revising television technology. These, plus cordless telephones, home-to-college feedback systems, and a host of other impending inventions, all have possibilities for the improvement of teaching. These possibilities can materialize if we are able to utilize the maximum capacity of humans in concert with the most applicable forms of technology for the enhancement of learning.

PERFORMANCE AND DROP RATE AS RELATED TO COMPUTER-BASED INSTRUCTION THROUGH RSVP

Fall 1975-76

(FIGURE 3)



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